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REVISION OF THE SIBLING SPECIES OF
MENDIDAPHODIUS LINEARIS GROUP

(COLEOPTERA, SCARABAEOIDEA: APHODIIDAE)

To establish with modern criteria the systematic position of each taxon belonging to the group of *Mendidaphodius linearis* (Reiche & Saulcy, 1856), we studied thoroughly the type materials at present at our disposal and obviously we verified the correct settlement of the nomenclatural questions.

Otherwise, one of us (DELLACASA G. in HOLLANDE & THÉRON, 1999 (1998): 76, footnote) synonymized with *Calamosternus* the subgenus *Pseuderytus* created by Hollande & Thérond for *Aphodius chobauti* Clouët, 1896. The complex of its morpho-anatomical features allows to retain more reasonable to restore said genus-group taxon instead to consider *Aphodius chobauti* pertaining either to *Calamosternus* or to *Erytus* or to *Mendidaphodius* as resulting from literature.

Moreover we ascertained that *Aphodius longetarsalis* Pittino, 1988, doubtfully ascribed to the subgenus *Mendidaphodius*, pertains to the large genus *Chilo thorax* (*sensu* Dellacasa G., Bordat P. & Dellacasa M., 2001) because of the shape of paramera and epipharynx, as well as the elytra with the characteristics dark spots and notwithstanding the unusual sexual dimorphism shown in males mainly by the shape of maxillary palps and the length of the tarsal segments.

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Concluding, after our studies, the synonymies and the ascertained distribution of the *Mendidaphodius* taxa herein dealt with, result the following:

Mendidaphodius armiger (Harold, 1871): Greece(?), Turkey, Syria, Israel

Mendidaphodius brancsiki (Reitter, 1899): Turkmenistan, Kazakhstan
spinifrontis (Reitter, 1901)
adolfischmidtii (Reitter, 1909)

Mendidaphodius lepidulus (Harold, 1866): Israel, Iraq, Iran
aeratus (Helfer *apud* Harold, 1880) (*nomen nudum*)
bagdadensis (Petrovitz, 1971)
 ab. ***fuscolimbatus*** (Harold, 1880)
fuscolimbatus (Helfer *apud* Harold, 1869) (*nomen nudum*)

Mendidaphodius linearis (Reiche & Saulcy, 1856): Cyprus (?), Egypt, Israel, Turkey, Ukraine, Russia
cylindricus (Reiche, 1856)
 m. ***malinovskii*** (W. Koshantschikov, 1913)
sareptanus (Balthasar, 1935)
 ab. ***elegantulus*** (Hochhuth, 1873)
lgockii (Roubal, 1912)
roseus (W. Koshantschikov, 1913)
 ab. ***breitianus*** (Roubal, 1913)
rubronotatus (Balthasar, 1935)

Mendidaphodius paganettii (Petrovitz, 1963): Portugal (?), Spain, Morocco
cylindricus (Dejean, 1833) (*nomen nudum*)
lajonquierei (Baraud, 1977)

DICHOTOMICAL KEY TO INCLUDED *MENDIDAPHODIUS* TAXA

- 1 Elytra yellowish with juxtasutural interstices, lateral margins and sometimes apex more or less widely brown-reddish; first stria distinctly more deeply impressed than others; juxtasutural interstice narrowed toward apex (figs. 4-5) 2
- 1' Elytra usually blackish, sometimes reddish, rarely piceous with elongate discal spot orange; first stria no more deeply impressed than others and juxtasutural interstice not narrowed toward apex (fig. 1) 3
- 2(1) Elytral striae strongly crenulate; interstices feebly convex and sparsely but distinctly punctured (fig. 5). Strongly shiny. Head and pronotum brown-reddish, the latter with anterior angles somewhat testaceous; elytra yellowish with juxtasutural interstices, lateral margins and sometimes apex more or less widely dark reddish. Length 4-6 mm. Israel, Iran, Iraq *lepidulus*
- 2' Elytral striae not or faintly crenulate; interstices flat and nearly impunctate (fig. 4). Subshiny. Head and pronotum brownish, elytra dirty yellowish with suture and lateral margins piceous. Length 5-5.5 mm. Kazakhstan, Turkmenistan *brancsiki*
- 3(1') Epistome rugose on disc, granulate distally (fig. 2). Shining black. Length 5-6 mm. Greece (?), Turkey, Syria, Israel *armiger*
- 3' Epistome either irregularly punctured or rugose on disc but never granulate distally (figs. 1, 3) 4
- 4(3') Clypeus with lateral margins regularly rounded before genae; latter obtuse and distinctly more protruding than eyes; epistome irregularly and more or less densely punctured (fig. 1). Shiny. Piceous, sometimes elytra reddish, rarely piceous with elongate discal spot orange. Length 4-5 mm. Cyprus (?), Egypt, Israel, Turkey, Ukraine, Russia *linearis*
- 4' Clypeus with lateral margins distinctly bisinuate before genae; latter broadly rounded, auriculate, feebly more

protruding than eyes; epistome confusedly rugose (fig. 3). Shining black. Length 5-5.5 mm. Portugal (?), Spain, Morocco *paganettii*

Mendidaphodius armiger (Harold, 1871), **stat. nov. & comb. nov.** (figs. 2, 6-8)

Aphodius armiger Harold, 1871: 259

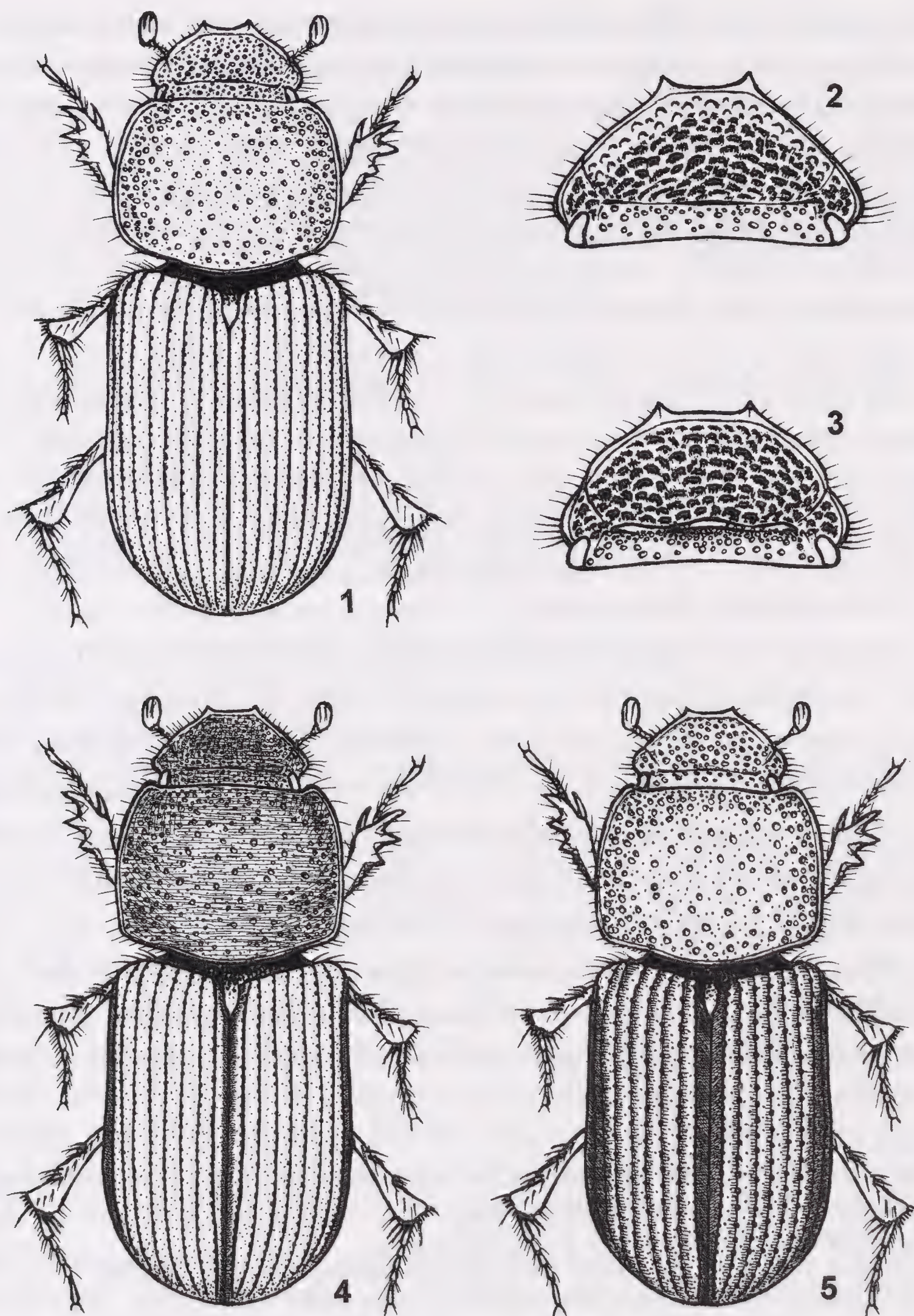
Aphodius (Nialus) armiger Reitter, 1892: 202 (as synonym of *linearis* Reiche & Saulcy, 1856); Schmidt, 1922: 218; Savtshenko, 1934: 89

Aphodius (Liothorax) armiger; Dellacasa M., 1988a: 381 (as synonym of *linearis* Reiche & Saulcy, 1856)

Type locality: "Griechenland" [Greece]

Type depository: unknown to authors (type probably lost)

Redescription: length 5-5.5 mm; elongate, cylindrical, convex, shiny, glabrous. Blackish; clypeal margin and front angles of pronotum shadely reddish; legs brown-reddish; antennal club piceous. Head with epistome gibbous, microreticulate, rather superficially rugose on disc, distally granulate; clypeus faintly sinuate at middle, denticulate at sides, thinly bordered, border very shortly bristled and faintly upturned, laterally regularly rounded toward genae; latter not at all auriculate, obtusely rounded, sparsely and rather elongately ciliate, more protruding than eyes; frontal suture finely impressed and faintly trigibbous; front microreticulate, doubly, coarsely and irregularly punctured. Pronotum transverse, convex, doubly and rather sparsely punctured; smaller punctures throughout scattered; large punctures, six times larger than small punctures, sparser on disc; sides feebly arcuate, rather thickly bordered, border nearly glabrous; hind angles obtusely rounded; base thinly bordered laterally, border nearly faint at middle. Scutellum small, pentagonal with sides parallel toward base, somewhat depressed at middle and finely punctured basally. Elytra very elongate, cylindrical, somewhat flattened on disc, deeply striate; striae distinctly punctured, faintly crenulate; interstices flat and imperceptibly punctulate. Fore tibiae rather stout, distally tridentate and proximally strongly serrulate at outer margin; upper side smooth. Second segment of anterior tarsi shorter than following two combined. Middle and hind tibiae with strong transverse carinae on outer face; apically fimbriate with short and equal spinules; apical spurs nearly of the same length. Hind tibiae superior apical spur sli-



Figs. 1-5: 1 - Habitus of *Mendidaphodius linearis* (Reiche & Saulcy, 1856), male, length 4-5 mm (Turkey: Vil. Kars, Kars env.); 2 - Head of *Mendidaphodius armiger* (Harold, 1871), male (Turkey: Vil. Gaziantep, Fevzipaşa); 3 - Head of *Mendidaphodius paganettii* (Petrovitz, 1963), male (Spain: Cadiz, Alcalà de los Gazules); 4 - Habitus of *Mendidaphodius brancsiki* (Reitter, 1899), male, length 5.5 mm (Kazakhstan: Indersk); 5 - Habitus of *Mendidaphodius lepidulus* (Harold, 1866), male, length 4 mm (Mesopotamien).

ghtly shorter than first tarsal segment; latter as long as following two combined. Male: epistome relatively more superficially rugose on disc; lateral gibbosities of frontal suture almost distinct; pronotum more sparsely punctured on disc; fore tibiae apical spur slender and relatively more elongate; metasternal plate longitudinally grooved. Female: epistome relatively more distinctly rugose on disc; frontal suture faintly gibbous laterally; pronotum more densely punctured on disc; fore tibiae apical spur shorter and stouter; metasternal plate nearly flat.

D i s t r i b u t i o n : Greece (?), Turkey, Syria, Israel.

M a t e r i a l e x a m i n e d ⁽¹⁾ . ISRAEL: Sarona, J. Sahlberg, 1 ex. (MTM); SYRIA: Akbes, 1 ex. (MTM); Mafrag, salt lake, 30.04.1970, 2 exx. (DC); TURKEY: Fevzipaşa, Vil. Gaziantep, 04.06.1989, E. & G. Dellacasa leg., 1 ex. (DC); Karacadag, Vil. Şanlı Urfa, m 1780, 15.04.1983, Z. Simsek leg., 1 ex. (MNHN); Reyhanlı, Vil. Hatay, 05.10.1988, E. & G. Dellacasa leg., 3 exx. (DC).

R e m a r k s . Harold described *Aphodius armiger* from "Griechenland" remarking that the new species might be close to *linearis* and *cylindricus*, unknown to him, but it is easily distinguishable from them because of hind tibiae apically fimbriate with spinules of equal length.

The synonymy of *Aphodius armiger* Harold, 1871 versus *Aphodius linearis* Reiche & Saulcy, 1856 was established by REITTER (1892: 202) and accepted by SAVTSCHENKO (1934: 89) too.

The type of *Aphodius armiger* Harold, 1871 was not found in Harold's collection in the Paris Museum nor in München and Berlin Museums where another part of Harold's typical material is preser-

⁽¹⁾ The material studied is kept in the following Institutions or private collections:

- Ballerio collection, Brescia, Italy (BC);
- Dellacasa collection, Genoa, Italy (DC);
- Magyar Természettudományi Múzeum, Budapest, Hungary (MTM);
- Muséum d'Histoire Naturelle, Genève, Switzerland (MHN);
- Muséum National d'Histoire Naturelle, Paris, France (MNHN);
- Národní Muzeum, Praha, Czech Republic (NAM);
- Museum für Naturkunde, Berlin, Germany (MN);
- Naturhistorisches Museum, Basel, Switzerland (NM);
- Naturhistoriska Riksmuseet, Stockholm, Sweden (NR);
- Pittino Collection, Milan, Italy (PC);
- Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZIRAS);
- Ziani Collection, Meldola (Forlì), Italy (ZC).

ved, thus it has to be considered probably lost. Moreover we were not able to find any specimen from Greece.

Because it was not possible to trace all types of involved taxa, we identified as *Aphodius armiger* several specimens from Israel, Syria and Turkey whose characters fulfil most closely Harold's diagnosis, with the aim to refrain from description of a new species in this particularly controversial and cumbersome group.

Mendidaphodius brancsiki (Reitter, 1899), **comb. nov.** (figs. 4, 18-20)

Mendidius brancsiki Reitter, 1899: 200

Aphodius (*Mendidaphodius*) *spinifrontis* Reitter, 1901: 73; Schmidt, 1913: 128; Dellacasa G., Bordat & Dellacasa M., 2001:187 (**new synonymy**)

Aphodius (*Mendidius*) *adolfischmidtii* Reitter, 1909: 75

Aphodius (*Mendidaphodius*) *brancsiki*; Schmidt, 1913: 128

Aphodius (*Mendidaphodius*) *adolfischmidtii*; Schmidt, 1913: 128; Nikolajev, 1987: 112 (as synonym of *brancsiki*)

Type locality: Indersk [Kazakhstan]

Type depository: Magyar Természettudományi Múzeum, Budapest (holotype male examined)

Redescription: length 4-5.5 mm; cylindrical, elongate, convex, shiny, glabrous. Head and pronotum brownish, elytra dirty yellowish with suture and lateral margins piceous; legs reddish; antennal club brownish. Head with epistome gibbous, microreticulate, rather coarsely and irregularly punctured on disc, distally punctation almost confuse; clypeus subtruncate at middle, denticulate at sides, thinly bordered, border very shortly ciliate and faintly upturned, laterally regularly rounded toward genae; latter not at all auriculate, obtusely rounded, sparsely and rather elongately ciliate, distinctly more protruding than eyes; frontal suture finely impressed and faintly trigibbous; front coarsely and rather irregularly punctured. Pronotum transverse, convex, doubly and almost densely punctured; smaller punctures throughout scattered; large punctures, four times larger than small punctures, sparser on disc; sides feebly arcuate, rather thickly bordered, border sparsely ciliate; hind angles obtuse; base thinly bordered. Scutellum small, pentagonal, parallel-sided basally, coarsely punctured on basal half. Elytra very elongate, subcylindrical, deeply striate; striae distinctly punctured but very feebly crenulate; interstices flat, imperceptibly punctulate. Fore tibiae rather stout, distally

tridentate and proximally strongly serrulate at outer margin; upper side smooth. Second segment of anterior tarsi shorter than following two combined. Middle and hind tibiae with strong transverse carinae on outer face; apically fimbriate with short and equal spinules; apical spurs nearly of the same length. Hind tibiae superior apical spur slightly shorter than first tarsal segment; latter as long as following two combined. Male: epistome relatively more superficially rugose on disc; lateral gibbosities of frontal suture somewhat distinct; pronotum more sparsely punctured on disc; fore tibiae apical spur slender and relatively more elongate; metasternal plate longitudinally grooved. Female: epistome relatively more distinctly rugose on disc; frontal suture without lateral gibbosities; pronotum more densely punctured on disc; fore tibiae apical spur shorter and stouter; metasternal plate nearly flat.

Distribution: Kazakhstan, Turkmenistan.

Material examined. KAZAKHSTAN: Bukhara, 21.05.1973, V. Kaepas leg., 3 exx. (DC); Uralsk, Reitter (*Aphodius adolfischmidtii* Reitter, 1909; holotype male and two paratypes females, MTM); TURKMENISTAN: Gr. Balachan [Gr. Balchan], 1 ex. (MTM); Kizil Arwat [Kizil-Arvat], Coll. S. Endrödi, 1 ex. (MTM); Tedjen [Tedschen *or* Tedzen], 1 ex. (MHN); Transcaspia [Indersk (Inderskoje See *or* Ozero Inders)], Coll. Reitter (*Aphodius brancsiki* Reitter, 1899; holotype male and one paratype female) (MTM); [Transcaspia, Indersk (Inderskoje See *or* Ozero Inders)], [Dr. Sievers] (*Aphodius spinifrontis* Reitter, 1901; lectotype female⁽²⁾, NR).

Remarks. In 1899, Reitter described *Mendidius brancsiki* from Indersk [Inderskoje See *or* Ozero Inders; Kazakhstan] and, in 1901, the new subgenus *Mendidaphodius* with the new species *Aphodius spinifrontis* (type species by monotypy) from the same locality. In 1909 he described *Aphodius* (*Mendidius*) *adolfschmidtii* from Uralsk [Kazakhstan].

NIKOLAJEV (1979: 112) synonymized *Aphodius adolfischmidtii* Reitter, 1909 versus *Aphodius brancsiki* Reitter, 1899.

⁽²⁾ This specimen, lacking of locality label, is surely the single example utilized by Reitter for the original description of the taxon due to doubtless autograph identification label.

We studied the types of *adolfischmidtii* (Budapest Museum), *brancsiki* (Budapest Museum) and *spinifrontis* (Stockholm Museum) and we ascertained or confirmed their synonymy.

Mendidaphodius lepidulus (Harold, 1866), **comb. nov.** (figs. 5, 15-17)

Aphodius lepidulus Harold, 1866: 119

Aphodius fuscolimbatus Helfer *apud* Harold, 1869: 1051 (*nomen nudum*)

Aphodius fuscolimbatus Harold, 1880: 155 (**new synonymy**)

Aphodius aeratus Helfer *apud* Harold, 1880: 156 (*nomen nudum*)

Aphodius (*Esymaphodius*) *lepidulus*; Reitter, 1892: 208

Aphodius (*Mendidaphodius*) *lepidulus*; Schmidt, 1913: 128; Balthasar, 1964: 102

Aphodius (*Mendidaphodius*) *fuscolimbatus* Schmidt, 1913: 128; Balthasar, 1964: 102

Aphodius (*Mendidius*) *bagdadensis* Petrovitz, 1971: 216 (**new synonymy**)

Type locality: Mesopotamien [Iraq] (restricted)

Type depository: Museum für Naturkunde, Berlin (lectotype male examined)

Redescription: length 4-6 mm, subcylindrical, elongate, moderately convex, shiny, glabrous. Head and pronotum brown-reddish, latter with front angles shadely testaceous; elytra yellowish with juxtasutural interstices, lateral margins and sometimes the apex too, more or less widely dark reddish; legs brown-yellow; antennal club brownish. Head with epistome moderately convex, densely, coarsely and almost irregularly punctured, punctation subrugose distally; clypeus subtruncate anteriorly, acutely denticulate at sides, thinly bordered, border sparsely but elongately bristled; genae rounded, slightly auriculate, shortly ciliate, feebly more protruding than eyes; frontal suture finely impressed, somewhat raised laterally; front densely and coarsely punctured. Pronotum feebly transverse, moderately convex, without trace of microreticulation, doubly, almost sparsely and coarsely punctured, punctation denser on sides; latter feebly rounded, thinly bordered, border rather shortly and sparsely ciliate; hind angles obtusely rounded; base thinly but distinctly bordered. Scutellum distinctly punctured on basal half. Elytra elongate, subparallel-sided; striae deep, distinctly crenulate but punctures rather far one from other; first stria distinctly deeper and wider toward apex; interstices moderately convex, strongly shiny, without microreticulation, sparsely and finely punctured; juxtasutural interstice somewhat angustate preapically. Hind tibiae superior apical spur as long as first tarsal

segment; latter as long as following two combined. Male: metasternal plate excavate, grooved at middle and distinctly punctured. Female: metasternal plate nearly flat, relatively less deeply grooved and less distinctly punctured.

Colour variation: *fuscolimbatus* (Harold, 1880): elytra from sixth interstice to epipleural margin and preapical declivity too, brown-reddish.

Distribution: Israel, Iraq, Iran.

Material examined. ISRAEL: Ramlech [Ramla], 1 ex. (MNHN); IRAQ: Assur [Asur], Mesopotam.[ia], 2 exx. (MHN); Bagdad, 04.1936, Frey, 6 exx. (NM, MHN); Bagdad, 1 ex. (MNHN); Bakuba, NO v. Bagdad, 23.V.1963, Kasy & Vartian (male, typus of *Aphodius* (*Mendidius*) *bagdadensis* Petrovitz, 1971, MHN); Mesop[otamia], Helf[er] (*Aphodius lepidulus* Harold, 1866 (*Aphodius aeratus* Helfer, *in litteris*): *lectotypus* male and *paralectotypi* (2 males and 2 females), herein designated, MN); Mesop[otamia], Helf[er] (*Aphodius fuscolimbatus* Harold, 1880 (*Aphodius fuscolimbatus* Helfer, *in litteris*): *lectotypus* female and *paralectotypus* female, herein designated, MN); IRAN: Bandar-abass, Süd Iran, leg. Petrovitz, 11 exx. (MHN, MNHN); Jranshar, 800 m, Belutschistan, 1/10.03.1954, Richter & Schäuffele leg., 20 exx. (NM, MHN); Shush (Susa), Khuzistan, 10/24.06.1956, Richter & Schäuffele leg., 1 ex. (MHN).

Remarks. REICHE & SAULCY (1856: 397) listed and redescribed *Aphodius fimbriolatus* Mannerheim, 1849 on a male specimen collected in "Jérusalem" and surely identified since comparison with a male specimen from Dauria sent to them by Mannerheim the same.

In 1866, Harold described *Aphodius lepidulus* from "Syrien, Mesopotamien und der grösse Theil Klein-asiens" and discussed the correct identification of *Aphodius fimbriolatus* recorded by Reiche & Saulcy supposing that it could be identical with his new species. Though *fimbriolatus* Mannerheim probably is not so widely distributed to be found in Israel, the species mentioned by French authors might be one of the other *Mendidius* taxa from the Near East (e. g. *Mendidius palmetincolus*) but surely it cannot be a synonym of *Aphodius lepidulus*.

In the Catalogue (1869: 1051), Harold listed *Aphodius lepidulus*, with *Aphodius fuscolimbatus* Helfer (*in litteris*) as its synonym, from "Mesopotamia" only. In 1880, he changed his 1869 opinion and, maintaining Helfer's name, described *Aphodius fuscolimbatus* as new

species. In the same paper (p. 156) he synonymized *Aphodius aera-tus*, another of Helfer's (*in litteris*) taxon from "Mesopotamia", with *Aphodius lepidulus*.

A. Schmidt (1907: 201) accepted, though doubtfully, Harold's 1866 opinion on *Aphodius fimbriolatus* Mannerheim *sensu* Reiche & Saulcy, 1856, attributed the authorship of this taxon to Reiche & Saulcy and created for it the new name *Aphodius dubius*. So we have eliminated these names from *lepidulus* synonymy.

We examined the lectotypes of *lepidulus* and *fuscolimbatus* and we ascertained their synonymy. We herein consider *fuscolimbatus* a colour variation of *lepidulus* usually seen in large female specimens. We studied also the type of *Aphodius (Mendidius) bagdadensis* Petrovitz, 1971 and we ascertained its synonymy with *lepidulus* Harold.

Mendidaphodius linearis (Reiche & Saulcy, 1856), **comb. nov.** (figs. 1, 9-11)

Aphodius linearis Reiche & Saulcy, 1856: 394

Aphodius cylindricus Reiche, 1856: 396; Dellacasa G., 1983: 279 (as doubtful synonym of *linearis*)

Aphodius (Nialus) cylindricus; Mulsant & Rey, 1870

Aphodius plagiatus "var." *elegantulus* Hochhuth, 1873: 131; Savtshenko, 1934: 89

Aphodius (Nialus) linearis; Reitter, 1892: 202; Savtshenko, 1934: 89; Balthasar, 1964: 425

Aphodius varians "var." *lgockii* Roubal, 1912: 71; Savtshenko, 1934: 89

Aphodius lgockii; Roubal, 1913: 70; Savtshenko, 1934: 89

Aphodius lgockii "var." *breitianus* Roubal, 1913: 71

Aphodius (Nialus) malinovskiyi Koshantschikov W., 1913: 187; Savtshenko, 1934: 89; (as synonym of *linearis*)

Aphodius (Nialus) malinovskiyi "var." *roseus* Koshantschikov W., 1913: 187; Savtshenko, 1934: 89 (as synonym of *linearis* ab. *elegantulus*)

Aphodius (Nialus) linearis ab. *elegantulus*; Savtshenko, 1934: 89

Aphodius (Nialus) linearis ab. *breitianus*; Savtshenko, 1934: 89

Aphodius (Nialus) sareptanus Balthasar, 1935: 123 (**new synonymy**)

Aphodius (Nialus) sareptanus ab. *rubronotatus* Balthasar, 1935: 124 (**new synonymy**)

Aphodius (Liothorax) linearis; Dellacasa G., 1983: 279

Type locality: "environs de Napluose" [Nablus; Israel]

Type depository: Muséum national d'Histoire naturelle, Paris (type examined)

Redescription: length 4-5 mm; cylindrical, elongate, convex, shiny, glabrous. Piceous; clypeal margin and front angles of pronotum

shadely reddish; sometimes elytra either dark reddish or piceous with an elongate discal spot orange; legs brown-reddish; antennal club brownish. Head with epistome feebly gibbous, doubly, rather irregularly and more or less coarsely and densely punctured; sometimes punctation distally rather confuse; clypeus feebly sinuate at middle, more or less acutely angulate or denticulate at sides, very thinly bordered, border sparsely ciliate; genae not or faintly auriculate, widely rounded, more protruding than eyes; frontal suture finely impressed, faintly trigibbous; front more sparsely punctured than epistome. Pronotum transverse, convex, doubly and sparsely punctured; fine and very small punctures throughout scattered; large punctures, six to nine times larger than small punctures, sparser on disc; sides somewhat rounded, thickly bordered, border nearly glabrous; hind angles widely obtuse; base thinly bordered laterally, border nearly faint at middle. Scutellum small, pentagonal with sides parallel toward base, feebly convex, with few, rather large and irregularly sparse punctures. Elytra strongly elongate, cylindrical, somewhat flattened on disc, deeply striate; striae distinctly punctured, faintly crenulate; interstices feebly convex on disc, flat apically, very sparsely and nearly imperceptibly punctured. Fore tibiae stout, distally acutely tridentate and proximally distinctly serrulate at outer margin; upper side nearly imperceptibly and sparsely punctulate. Second segment of anterior tarsi as long as following two combined. Middle and hind tibiae with strong transverse carinae on outer face; apically fimbriate with short and equal spinules; apical spurs nearly of the same length. Hind tibiae superior apical spur slightly shorter than first tarsal segment; latter longer than following two combined. Male: epistome relatively more gibbous and more sparsely punctured; frontal suture feebly trigibbous; pronotum more sparsely punctured on disc; fore tibiae apical spur stouter, more elongate and sublanceolate; metasternal plate longitudinally grooved. Female: epistome relatively less gibbous and more densely punctured; frontal suture without trace of gibbosities; pronotum disc more densely punctured; fore tibiae apical spur slender, shorter, not at all lanceolate; metasternal plate nearly flat.

M o r p h a : *malinovskyi* (Koshantschikov W., 1913) [*sareptanus* (Balthasar, 1935)]: clypeus acutely angulate at sides of median sinuosity. Russia, Ukraine.

C o l o u r v a r i a t i o n s : *elegantulus* (Hochhuth, 1873): elytra more or less pale reddish. Ukraine; *breitianus* (Roubal, 1913): elytra

piceous with an elongate discal spot orange. Ukraine.

Distribution: Cyprus (?)⁽³⁾, Israel, Egypt, Turkey, Ukraine, Russia.

Material examined. EGYPT: one female specimen without more detailed locality label (MNHN); ISRAEL: Gebatha, 1.06.1927, 2 exx. (MNHN, NAM); Jaffa, 1 ex. (MHN); Plane du Sacrifice, M. Carmel, 2.05.1930, J. Tapukli leg., 1 ex. (MNHN); Schemla, 25.05.1927, 1 ex. (MNHN); RUSSIA: Kasan [Kazan], Exp. Zichy, leg. Csiki, 2 exx. (MTM, PC); Wassilsursk, Gouv. Nishny-Novgorod, 26.05-6.06.1913, Malinovsky leg. (*Aphodius malinovskyi* Koshantschikov W., 1913: *lectotypus* male herein designated, ZIRAS); TURKEY: Adana, Vil. Adana, 35 exx. (DC, MHN, MNHN, NAM); Ceyhan, Vil. Adana, 06.1937, dr. Vasvári leg., 37 exx. (DC, MTM); Manavgat, Vil. Antalya, 5.05.1962, Wewalka leg., 1 ex. (MHN); Manavgat, Vil. Antalya, 26.01.1968, Petrovitz-Ressl leg., 2 exx. (MHN); Manavgat, Vil. Antalya, 26.05.1968, C. Holtzchuh leg., 2 exx. (MHN); Side, Vil. Antalya, 26.05 – 3.06.1968, K. & S. Welschmied leg., 1 ex. (BC); Antakya, Vil. Hatay, 19.05.1966, J. Klapperich leg., 2 exx. (MHN); Anamur, Vil. İçel, Petrovitz-Ressl leg., 1 ex. (MHN); Kars env., Vil. Kars, 10.06.1989, E. & G. Dellacasa leg., 2 exx. (DC); Serik, Vil. Kütahya, 5.05.1969, W. Wittmer leg., 10 exx. (NM); UKRAINE: Sarepta, Bodemeyer leg. (*Aphodius sareptanus* Balthasar, 1935: *lectotypus* female and one female *paralectotypus* herein designated, Balthasar Collection, NAM); Sarepta, Bodemeyer leg. (*Aphodius sareptanus* “var.” *rubronotatus* Balthasar, 1935: *lectotypus* female and two females *paralectotypi* herein designated, Balthasar Collection, NAM).

Remarks. REICHE & SAULCY described (1856: 394) *Aphodius linearis* from “environs de Naplouse” [Nablus, Israel] and, in the same work, Reiche himself (1856: 396, footnote), revamping Dejean’s name, supplied the diagnosis of *Aphodius cylindricus* from Spain and from France. Importantly, these authors remarked in the description that both taxa have the hind tibiae apically fimbriate with unequal spinules. On the contrary, the type specimens have the hind tibiae apically fimbriate with short and equal spinules.

In his Catalogue (1869: 1046, 1051), Harold listed *Aphodius cylindricus* Reiche, 1856 from “Hispania” only and *Aphodius linearis* Reiche

⁽³⁾ Baudi in the manuscript catalogue of his collection, now preserved in Turin Museum, listed this species from Cyprus but not any specimens of this taxon were therein found.

[sic!], 1856 from "Graecia".

MULSANT & REY (1870: 457-458) placed *Aphodius cylindricus* Reiche, 1856 in the new subgenus *Nialus* mentioning the type locality as: "Cette espèce, indiqué par Dejean comme provenant de l'Espagne, a été prise dans les environs de Paris. Nous l'avons décrite d'après des exemplaires de la collection de notre savant ami M. Reiche".

HOCHHUTH (1873: 131) described *Aphodius plagiatus* "var." *elegantulus* from Gouvernement Kiew [Ukraine] based on specimens with elytra reddish with suture and lateral margins blackish.

REITTER (1892: 202) considered *Aphodius linearis* Reiche [sic!], 1856 as belonging to the subgenus *Nialus*, as already established by MULSANT & REY (1870), and recorded the species from "Syrien, Griechenland". He proposed also *Aphodius armiger* Harold, 1871 as a junior synonym of *linearis*. Later Reitter (p. 209) remarked that *Aphodius cylindricus* Reiche, 1856 from France and Spain might belong either to the new subgenus *Esimaphodius* or to *Mendidius*.

D'ORBIGNY (1896: 215, footnote) reported that *cylindricus* was erroneously recorded from Spain in Harold's catalogue and that, after the examination of *cylindricus* and *linearis* types in Reiche collection at Paris Museum, he was not able to find any difference between the two taxa. Moreover the French author noted that the locality "Paris" under one type specimens of *cylindricus* might be probably false. We examined the types of both species and we agree with d'Orbigny on their synonymy.

ROUBAL (1912:71) described *Aphodius varians* "var." *lgockii* from Kiyew [Ukraine] and a year later (1913: 70), upgraded this "varietas" as a valid species, describing also its colour variation *breitianus* from the same locality.

Wladimir KOSHANTSCHIKOV (1913: 187) described *Aphodius malinovskiyi* and its colour variation *roseus* from "Wassilsurks, Gouv. Nishny-Novgorod" [Russia] distinguishing the new taxon from *linearis* mainly by clypeus feebly sinuate at middle and acutely angulate but not denticulate at sides; pronotum with double and moderately dense punctation, second segment of anterior tarsi as long as following two combined.

Surprisingly enough, *Aphodius malinovskiyi* was overlooked by SCHMIDT (1922) as well as by all subsequent authors (e. g.: BALTHASAR, 1964). Otherwise, as recorded by one of us (DELLACASA M., 1988a:

381) it was synonymized with *Aphodius linearis* Reiche & Saulcy, 1856 by SAVTSHENKO (1934) but this paper was also forgotten.

Effectively, in a remarkable work dealing with the included taxa, Savtshenko established new synonymies and gave a systematic redefinition of the colour variations. Among others, he stated that *Aphodius plagiatus* "var." *elegantulus* Hochhuth, 1873 has to be considered a colour variation of *linearis* and *Aphodius malinovskiyi* "var." *roseus* Koshantschikov W., 1913 its junior synonym.

In addition, accepting the generally adopted synonymy of *Aphodius cylindricus* Reiche, 1856 and *Aphodius armiger* Harold, 1871 versus *linearis* Reiche & Saulcy, 1856, the Russian author established also the synonymy of *Aphodius lgockii* Roubal, 1912 versus *linearis* ab. *elegantulus* Hochhuth, 1873 and considered *Aphodius lgockii* "var." *breitianus* Roubal, 1913 as a colour variation of *linearis*. We herein accept his conclusions having no possibility to examine the Hochhuth's and Roubal's types.

BALTHASAR (1935: 123) described *Aphodius sareptanus* and its colour variation *rubronotatus* from "Sarepta, Rossia mer." [Ukraine] distinguished from *linearis* by the clypeus distinctly angulate but not denticulate at sides of median sinuosity. We examined Balthasar's types and ascertained their synonymy with *linearis*. We consider *sareptanus* identical to *malinovskiyi* which is simply a morpha of *linearis*.

Mendidaphodius paganettii (Petrovitz, 1963), **stat. nov. & comb. nov.** (figs. 3, 12-14)

Aphodius cylindricus Dejean, 1833: 162 (*nomen nudum*)

Aphodius (*Nialus*) *paganettii* Petrovitz, 1963: 161; Dellacasa M., 1988a: 381 (as synonym of *cylindricus* Reiche & Saulcy [sic!], 1856)

Aphodius (*Nialus*) *linearis* ssp. *lajonquierei* Baraud, 1977: 124

Aphodius (*Liothorax*) *linearis* ssp. *lajonquierei*; Dellacasa M., 1988a: 381 (as synonym of *cylindricus* Reiche & Saulcy [sic!], 1856)

Type locality: Ponferrada [Spain]

Type depository: Muséum d'Histoire naturelle, Genève (holotype male examined)

Redescription: length 5-5.5 mm; cylindrically elongate, convex, shiny, glabrous. Blackish; clypeal margin and front angles of pronotum shadely reddish; legs brown-reddish; antennal club brownish. Head with epistome feebly gibbous, confusedly and coarsely rugose, distally more confusedly and more superficially rugose;

clypeus truncate at middle with acute and strongly upturned denticles at sides, thinly bordered, border distally upturned and rather elongately and sparsely bristled, bisinuate laterally toward genae; latter auriculate, widely rounded, elongately and sparsely ciliate, moderately more protruding than eyes; frontal suture subcariniform, moderately trigibbous; front coarsely, doubly and irregularly punctured. Pronotum transverse, convex, doubly and rather densely punctured; smaller punctures throughout scattered; large punctures, six to seven times larger than small punctures, sparser on disc; sides feebly rounded, rather thickly bordered, border glabrous; hind angles obtusely rounded; base very thinly bordered laterally, border nearly faint at middle but margin therein marked by a belt of rather coarse contiguous punctures. Scutellum small, pentagonal, with sides parallel toward base, nearly flat, rather densely and coarsely punctured. Elytra cylindrical, very elongate, somewhat flattened on disc, deeply striate; striae distinctly punctured and feebly crenulate; interstices slightly convex, sparsely and near imperceptibly punctulate. Fore tibiae distally tridentate and proximally distinctly serrulate at outer margin; upper side faintly and sparsely punctulate. Second segment of anterior tarsi shorter than following two combined. Hind tibiae with apical spurs nearly of the same length. Middle and hind tibiae with strong transverse carinae on outer face; apically fimbriate with short and equal spinules. Superior apical spur of hind tibiae slightly shorter than first tarsal segment; latter as long as following two combined. Male: epistome relatively more superficially rugose; gibbosities of frontal suture more raised; pronotum disc less densely punctured; fore tibiae apical spur slender; metasternal plate longitudinally grooved. Female: epistome relatively more slightly rugose; gibbosities of frontal suture nearly faint; pronotum disc more densely punctured; fore tibiae apical spur slender; metasternal plate nearly flat.

Distribution: Portugal (?)⁽⁴⁾, Spain, Morocco.

Material examined. MOROCCO: Tetouan env., 600 m, 15.06.1983, L. & R. Pittino leg., 1 ex. (PC); SPAIN: Ciudad Rodrigo→Salamanca (pond env.), 13.07.1990, P. Mazzoldi leg., 1 ex. (BC); El

⁽⁴⁾ In our old records we found a note recording a male specimen of *Aphodius cylindricus* (prope *paganettii*) from Evora, Portugal, leg. Schatzmayr that would be in the collections of Milan Museum. Unfortunately this specimen was not therein again traced to ascertain its correct identification.

Picacho, Alcalà de los Gazules, Cadiz, 21.09.1986, B. Jordan leg., 1 ex. (ZC); La Pilita, Alcalà de los Gazules, Cadiz, 13.05.1985, B. Jordan leg., 2 exx. (DC); Ponferrada, Paganetti leg. (holotype male, MHN); Ponferrada, Paganetti leg., 1 ex. (MTM); Salamanca, 06.1957 (allotype of *Aphodius linearis* ssp. *lajonquierei* Baraud, 1977, Baraud Collection, MNHN); Villamanrique, Sevilla, 10.04.1955, J. Baraud leg. (holotype male of *Aphodius linearis* ssp. *lajonquierei* Baraud, 1977, Baraud collection, MNHN).

Remarks. DEJEAN listed in his Catalogue (1833: 162) *Aphodius cylindricus* Dejean (*nomen nudum*) from “Hispania”. Unfortunately we cannot trace the type specimen of Dejean’s taxon but its patria typica indicates that it is identical to the other species furtherly described from this Country – viz. *A. paganettii* – and therefore we listed this already invalid name within the synonyms of the latter.

PETROVITZ (1963: 641) described *Aphodius paganettii* based on a single male specimen from Ponferrada (Spain) remarking that the new taxon belongs to the *linearis* group but is easily distinguishable mainly by the larger size.

BARAUD (1977: 124) described *Aphodius linearis* ssp. *lajonquierei* from “Espagne (Sevilla), Villamanrique” distinguished from the nominotypical subspecies mainly by the clypeus acutely denticulate at sides of the moderately deep median sinuosity and laterally bisinuate before the genae which are rounded, auriculate and rather distinctly more protruding than the eyes. BARAUD himself (1992: 194) established the synonymy of *lajonquierei* versus *paganettii*.

As already mentioned the species *chobauti* and *longetarsalis* must be moved from the genus-group *Mendidaphodius* respectively to *Pseuderytus* and *Chilo thorax*. We deem useful to supply the redescriptions of involved taxa due to the inadequate original definitions.

Genus **PSEUDERYTUS** Hollande & Thérond, 1999, **stat. nov.**

Aphodius (Pseuderytus) Hollande & Thérond, 1999: 76; Dellacasa G., 1999: 76 (as synonym of *Calamosternus*); Dellacasa G., Bordat P. & Dellacasa M., 2001:109

Type species: *Aphodius chobauti* Clouët, 1896 (by monotypy)

R e d e s c r i p t i o n : small species (length 4-6 mm), elongate, sub-cylindrical, convex, shiny; nearly glabrous, elytra with extremely short and sparse yellowish hairs on preapical declivity. Reddish-testaceous, elytral suture darkened. Head rather small, frontward somewhat angustate; epistome convex, strongly, confusedly rugosely punctured; clypeus sinuate at middle, rounded at sides, thinly bordered, border feebly upturned, sparsely and elongately bristled; genae rounded, not more protruding than eyes; latter rather large; frontal suture cariniform, feebly tuberculate at middle. Pronotum, short, feebly transverse, doubly punctured; lateral margins elongately ciliate; hind angles widely rounded, base thinly bordered. Scutellum small, elongate, subparallel-sided basally. Elytra strongly elongate, two times and half longer than pronotum, not denticulate at shoulder; striae fine, not crenulate; interstices flat, sparsely punctured. Pygidium strongly micro-reticulate, rather confusedly punctured, quite pubescent, pubescence recumbent with mixed several straight and very elongate setae; apical margin elongately ciliate. Fore tibiae distally tridentate and proximally serrulate at outer margin; upper side smooth. Middle and hind tibiae with strong transverse carinae on outer face, each carina fringed with short and stout spinules; apically fimbriate with very short, stout and equal spinules. Sexual dimorphism shown in males by more strong median tubercle of frontal suture and by more deeply incavate metasternal plate. Aedeagus rather stout, with paramera acuminate apically and therein membranous; the membrane distally ciliate. Epipharynx transverse, not sinuate at front margin and feebly rounded laterally; epitorma drop-shaped; corypha with apical spinules moderately elongate; pedia densely pubescent toward corypha with mixed several strong spines subserially arranged; chaetoparia somewhat shortened, moderately dense and moderately elongate.

D i s t r i b u t i o n : eremian species widely spread in Northern Africa and Middle East.

R e m a r k s . The genus *Pseuderytus* must be placed within the genus-group taxa characterized by:

- scutellum small; pentagonal, parallel-sided basally;
- hind tibiae apically fimbriate with short and equal spinules;
- basal margin of pronotum bordered;
- clypeus rounded at sides;

and can be keyed as follows:

- 1- Clypeus with lateral margins bristled; epistome strongly and confusedly rugose in both sexes; apical membranous processes of paramera distally ciliate *Pseuderytus*
- 1' Clypeus with lateral margins glabrous 2
- 2 (1') Aedeagus without membranous processes at apex of paramera; epistome rugosely punctured on disc in both sexes *Calamosternus*
- 2'- Aedeagus with membranous processes distally glabrous at apex of paramera; epistome, at least in males, finely punctured on disc *Pseudesymus*

***Pseuderytus chobauti* (Clouët, 1896), **comb. nov.** (figs. 21-24)**

Aphodius (Erytus) chobauti Clouët, 1896: 371

Aphodius (Mendidaphodius) chobauti; Schmidt, 1913: 128

Aphodius (Calamosternus) moltonii Schatzmayr 1938: 367; Dellacasa G., 1979: 180; Mariani & Pittino, 1983: 154; Pittino, 1984: 305 (as synonym of *chobauti*)

Aphodius (Mendidius) saharicus Balthasar, 1941: 37; Dellacasa G., 1979: 180 (as synonym of *moltonii*); Pittino, 1984: 305 (as synonym of *chobauti*)

Aphodius (Mendidius) oasis Baraud, 1976: 27 (**new synonymy**)

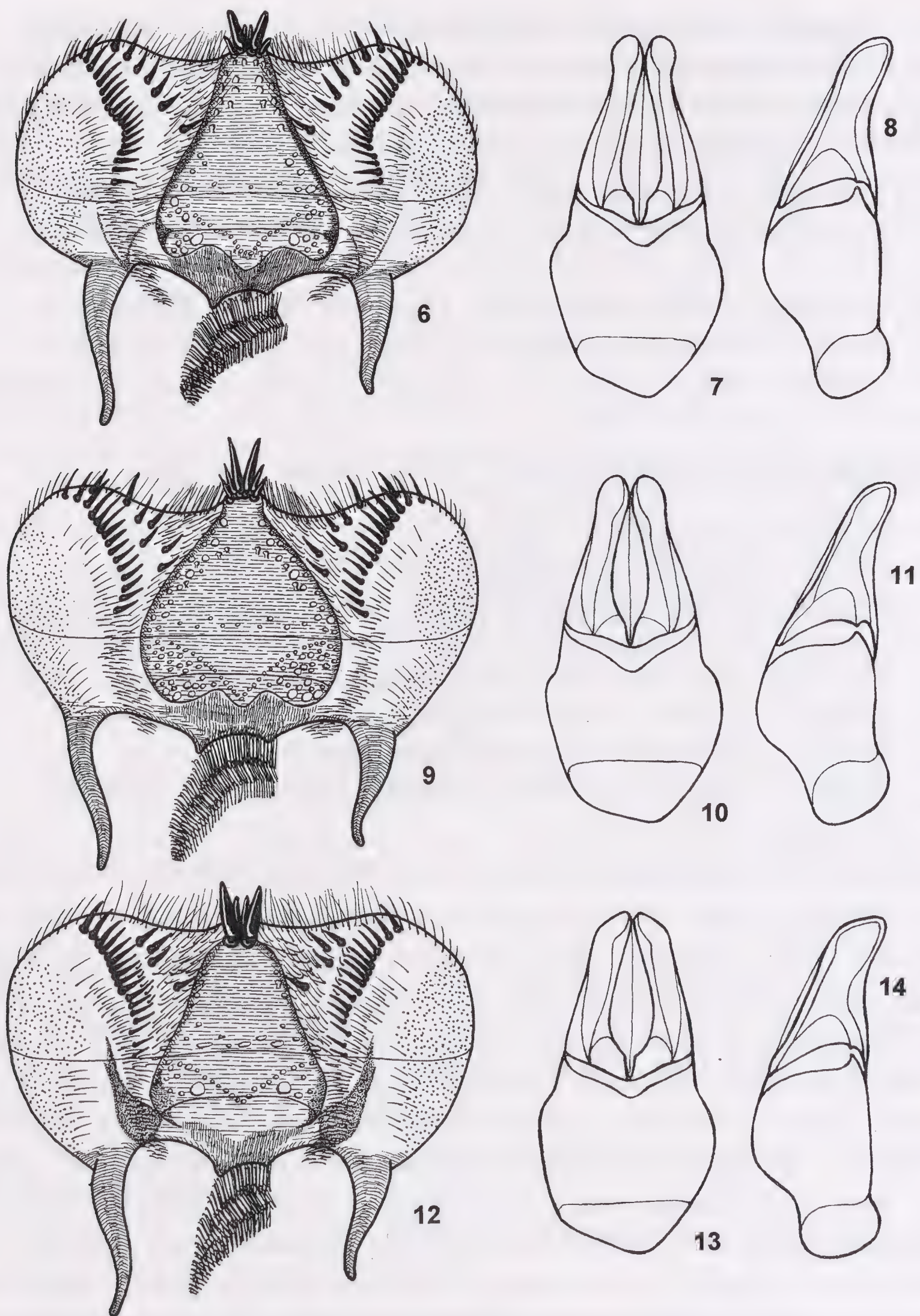
Aphodius (Calamosternus) chobauti; Pittino, 1984: 304

Aphodius (Pseuderytus) chobauti; Hollande & Thérond, 1999 (1998): 76

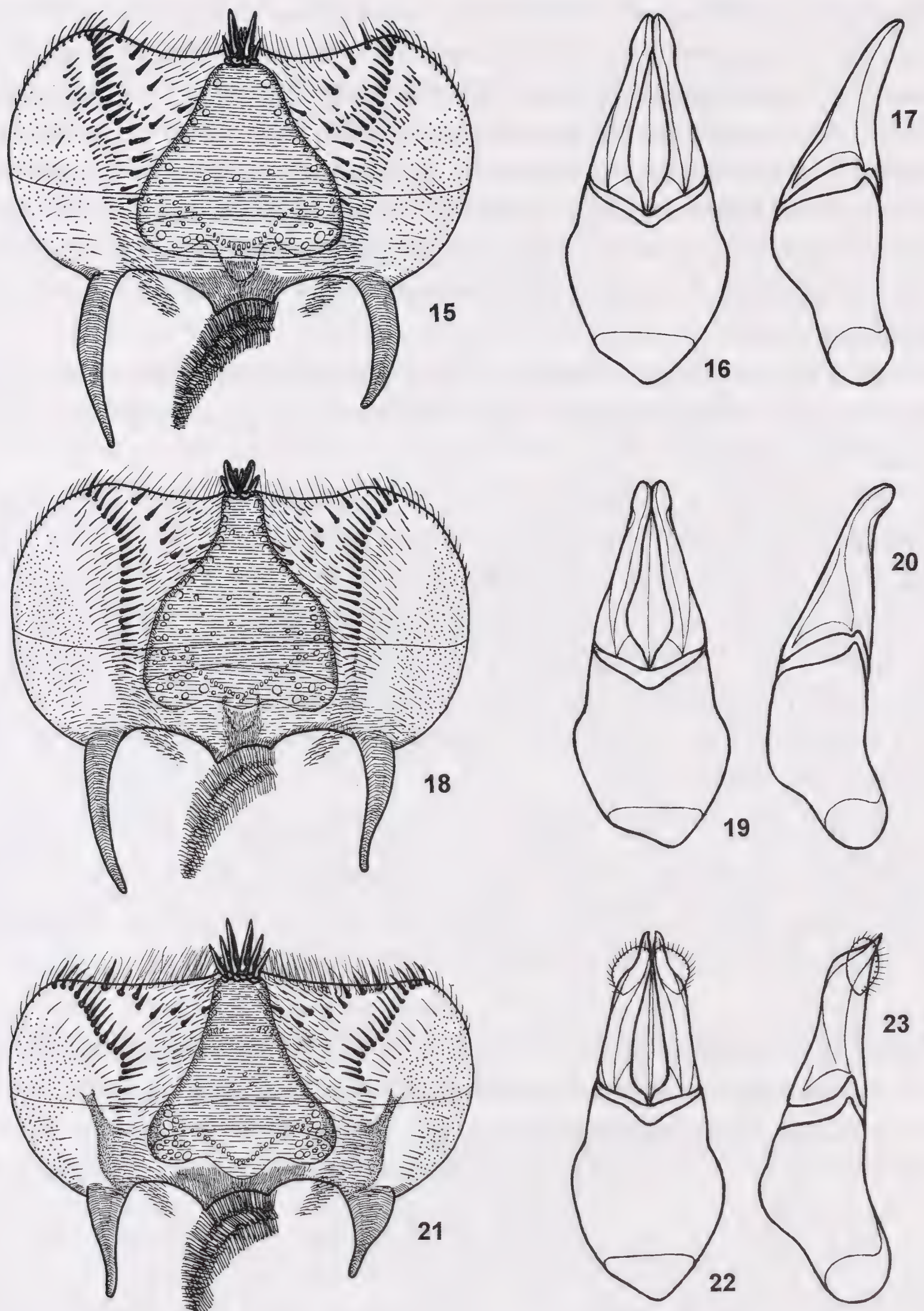
Type locality: Biskra, Algeria

Type depository: Muséum national d'Histoire naturelle, Paris (type male examined)

Redescription: length 4-6 mm; elongate, subcylindrical, convex, shiny, glabrous. Reddish-testaceous, head, pronotum, lateral margins and base, and elytral suture narrowly dark brownish as well as frontal suture and two spots on pronotal sides. Head with epistome convex, strongly, coarsely, densely, irregularly rugose; clypeus moderately sinuate at middle rounded at sides, distinctly thinly bordered, border feebly upturned; genae rounded, subauriculate, sparsely ciliate, no more protruding than eyes; frontal suture cariniform, distinctly raised at each side, with feeble median tubercle; front coarsely and somewhat irregularly punctured. Pronotum convex, doubly and rather sparsely punctured, punctation denser on sides, lateral margins regularly arcuate, thinly bordered; border sparsely elongately ciliate; hind angles widely rounded; base not bisinuate, thinly bordered. Scutellum elongate, basally coarsely and somewhat irregularly punctured. Elytra convex, subparallel-sided, striae fine, not crenulate; interstices flat, sparsely but distinctly punctured, preapical declivity with denser punctation; first stria deeper and juxtasutural interstice somewhat



Figs. 6-14: 6-8 - *Mendidaphodius armiger* (Harold, 1871) (Turkey: Vil. Gaziantep, Fevzipaşa): 6. epipharynx; 7-8. aedeagus (dorsal and lateral view); 9-11 - *Mendidaphodius linearis* (Reiche & Saulcy, 1856) (Turkey: Vil. Kars, Kars env.): 9. epipharynx; 10-11. aedeagus (dorsal and lateral view); 12-14 - *Mendidaphodius paganettii* (Petrovitz, 1963) (Spain: Cadiz, Alcalà de los Gazules): 12. epipharynx; 13-14. aedeagus (dorsal and lateral view).



Figs. 15-23: 15-17 - *Mendidaphodius lepidulus* (Harold, 1866) (Mesopotamien): 15. epipharynx; 16-17. aedeagus (dorsal and lateral view); 18-20 - *Mendidaphodius brancsiki* (Reitter, 1899) (Kazakhstan: Indersk): 18. epipharynx; 19-20. aedeagus (dorsal and lateral view); 21-23 - *Pseuderytus chobauti* (Clouët, 1896) (Israel: Elifaz near Timna): 21. epipharynx; 22-23. aedeagus (dorsal and lateral view).

angustate toward apex. Middle and hind tibiae rather short; the characteristic elongate seta stout. Hind tibiae superior apical spur longer than first tarsal segment; latter shorter than following two combined. Male: median tubercle of frontal suture relatively more distinct; metasternal plate moderately incavate, with distinct median longitudinal groove and more densely punctured. Female: median tubercle of frontal suture relatively weaker, sometimes obsolete; metasternal plate nearly flat, slightly grooved longitudinally at middle and more sparsely punctured.

Distribution: Northern Africa (Mauritania, Morocco, Algeria, Tunisia, Libya, Egypt) and Middle East (Israel, Jordan, Iran, Iraq, Saudi Arabia)

Material examined. ALGERIA: Biskra, fin Avril 1895, Dr. A. Chobaut (lectotype male and paralectotype female, MNHN); Laghouat (paratype of *Aphodius (Mendidius) oasis* Baraud, 1976, Baraud Collection, MNHN); IRAQ: al-Muthanna, As Salman, 18.4.1980, R. Linnavuori, 1 ex. (DC); Karbala, Ukhaydir – Nukhayb, 6-7.4.1981, R. Linnavuori, 1 ex. (DC); ISRAEL: Elifaz nr. Timna, S. Distr., 19.4.1986, R. Linnavuori leg., 6 exx. (DC); En Gedi, S. Distr., 28.4.1986, R. Linnavuori leg., 2 exx. (DC).

Remarks. The study of type material indicates without doubt that *Aphodius (Mendidius) oasis* Baraud, 1976 (type locality: Laghouat, Algeria; Baraud Collection, Paris Museum) is a junior synonym of *Pseuderytus chobauti* (Clouët, 1896).

Chilo thorax longetarsalis (Pittino, 1988), **comb. nov.** (figs. 25-31)

Aphodius (Mendidaphodius?) longetarsalis Pittino, 1988: 118

Type locality: Aïn Sefra (Hauts Plateaux), Algeria

Type depository: Pittino R. Collection, Milan (Italy) (paratype male examined)

Redescription: length 3.5-4.5 mm, oval-elongate, moderately convex, shiny, glabrous. Head and pronotum brownish, more or less widely shadely testaceous at margins; elytra pale yellowish with brown-reddish suture and several cloudy spots more or less distinct (in typical form, each elytron with a triangular darkened area near scutellum, an oval-elongate subhumeral spot, a small discal spot and an irregular spot at half of lateral margin; before preapical declivity with a V-inverted shaped spot widened from third to fifth interstices and with a small preapical spot on the second interstice); legs yellowish;

antennal club testaceous; under side dark brown-reddish. Head with epistome convex, anteriorly with arcuate carina, subgranulose on disc, confusedly and rugosely punctured distally; clypeus distinctly sinuate at middle, obtusely rounded at sides, thickly bordered, the border upturned and rather elongately bristled; genae obtusely rounded, elongately ciliate, feebly more protruding than eyes; latter rather large; frontal suture distinct, slightly raised, with three transverse tubercles; front densely, coarsely and irregularly punctured. Pronotum moderately transverse, weakly convex, doubly, rather sparsely and irregularly punctured, punctation denser on sides; lateral margins feebly arcuate, thickly bordered, border elongately and sparsely ciliate; hind angles obtuse; base thickly bordered. Scutellum small, triangular, shiny, flat, distinctly punctured on basal half. Elytra slightly widened backward, finely striate; striae coarsely punctured and strongly crenulate; interstices shiny and nearly flat on disc, slightly convex, faintly alutaceous, finely, sparsely and rather irregularly punctured on preapical declivity. Pygidium almost sparsely punctured; punctures setigerous; pubescence recumbent, mixed several straight and strongly elongate setae; apical margin sparsely and elongately pubescent. Metasternal plate glabrous, coarsely and irregularly punctured; with deep median longitudinal groove. Fore tibiae distally tridentate and proximally feebly serrulate at outer margin; upper side smooth. Middle and hind tibiae with strong transverse carinae on outer face; apically fimbriate with irregularly unequal spinules. Hind tibiae superior apical spur slightly longer than first tarsal segment; latter shorter than following two combined. Male: median tubercle of frontal suture relatively more distinct; apical segment of maxillary palp slender and elongate; pronotum not narrowed frontward and less densely punctured on disc; fore tibiae apical spur rather short and stout, down- and outward bent, slightly longer than first tarsal segment; middle and hind tarsi somewhat longer than tibiae; tarsal segments very slender and elongate, the fifth exceptionally elongate (in fore tarsi as long as second, third and fourth combined; in middle and hind tarsi as long as third and fourth combined). Female: median tubercle of frontal suture relatively weaker; apical segment of maxillary palp plumper and shorter; pronotum somewhat narrowed frontward and more densely punctured on disc; fore tibiae apical spur very slender, slightly bent down- and outward, nearly as long as first and second tarsal segments combined; middle and hind tarsi shorter than tibiae; fifth segment of tarsi shorter

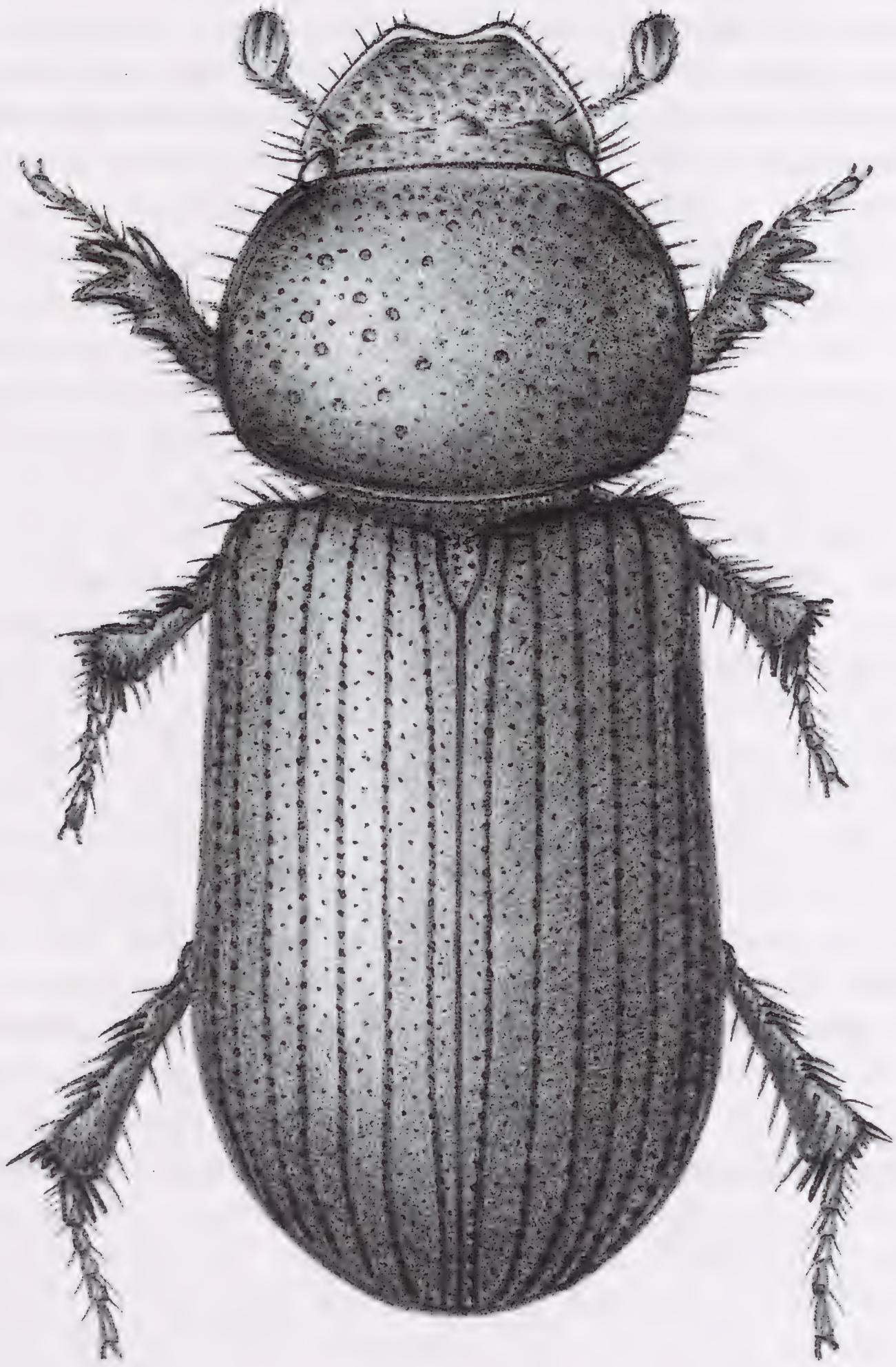
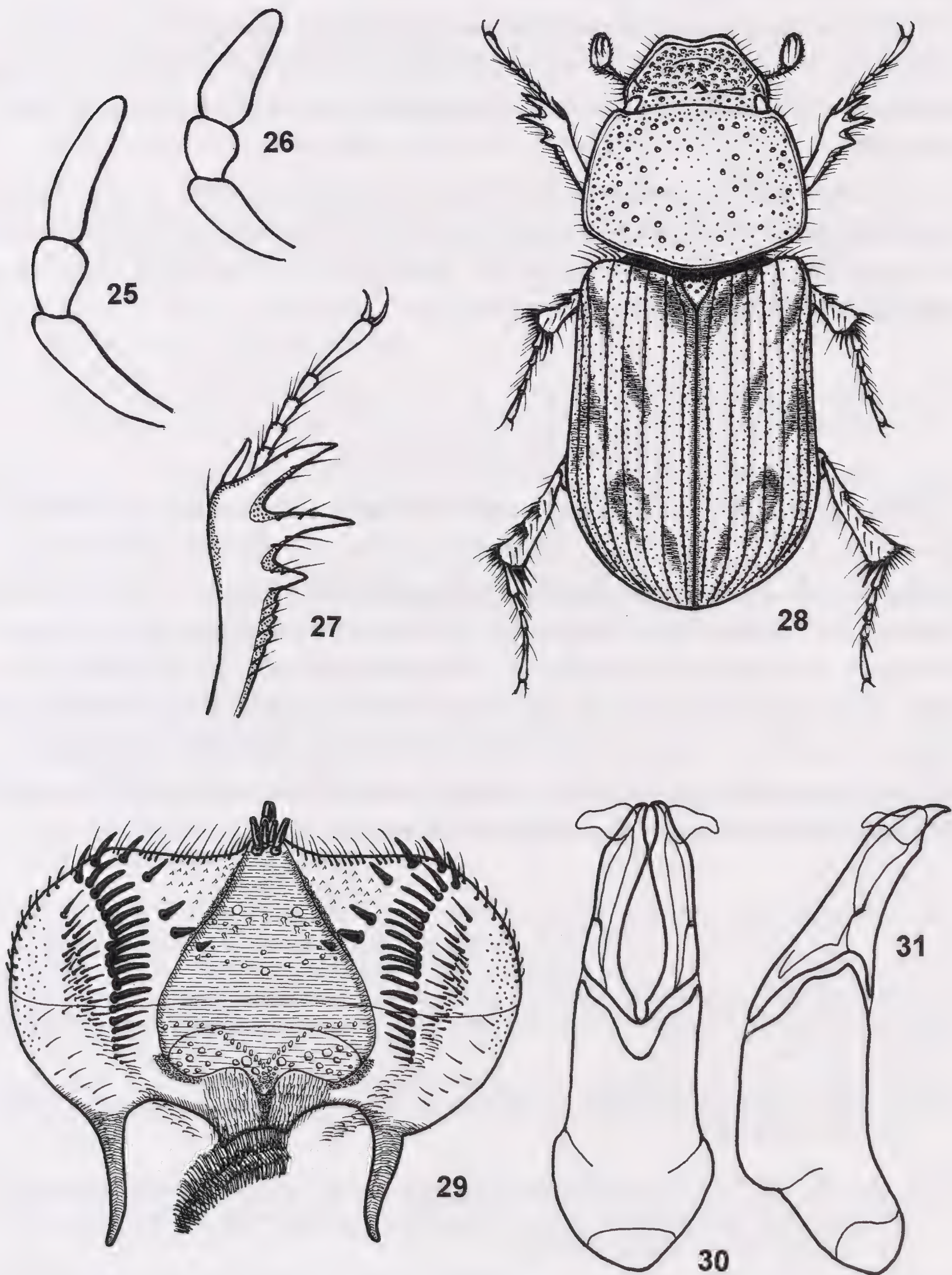


Fig. 24 – Habitus of *Pseuderytus chobauti* (Clouët, 1896), male; length 5 mm (Israel: Elifaz near Timna).



Figs. 25-31 – *Chilo thorax longetarsalis* (Pittino, 1988) (Algeria: Aïn Sefra): 25. left maxillary palp of male (dorsal view); 26. left maxillary palp of female (dorsal view); 27. right fore tibia and tarsus of male (dorsal view); 28. habitus of male, length 4.5 mm; 29. epipharynx; 30-31. aedeagus (dorsal and lateral view).

than third and fourth combined.

Distribution: probably saprophagous species, known only from type locality where it was collected on 4/5 April 1981 by sifting sand and vegetal debris among grass roots in arid desert steppe environments.

Material examined. Beyond a male paratype preserved in our collection, we had the chance to examine sixteen specimens, with the same data of the typical series, preserved in Pierotti's collection now in Genoa Museum.

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SUMMARY

Taxa of the *linearis* group of *Mendidaphodius* are revised and their systematic and nomenclatural status updated. New combinations, new status, and new synonymies of taxa herein dealt with are synthesized as follows:

- *Mendidaphodius armiger* (Harold, 1871) stat. nov. & comb. nov. [ex *Aphodius* (*Liothorax*) *armiger* as synonym of *linearis*];
- *Mendidaphodius brancsiki* (Reitter, 1899) and *Mendidaphodius lepidulus* (Harold, 1866) comb. nov. (ex *Aphodius* Sbg. *Mendidaphodius*);
- *Mendidaphodius linearis* (Reiche & Saulcy, 1856) comb. nov. (ex *Aphodius* Sbg. *Liothorax*);
- *Mendidaphodius paganettii* (Petrovitz, 1963) stat. nov. & comb. nov. [ex synonym of *Aphodius* (*Liothorax*) *cylindricus* Reiche, 1856]
- *Aphodius* (*Mendidaphodius*) *spinifrontis* Reitter, 1907 new synonymy = *Mendidaphodius brancsiki* (Reitter, 1899);
- *Aphodius* (*Mendidius*) *bagdadensis* Petrovitz, 1971 new synonymy = *Mendidaphodius lepidulus* (Harold, 1866);
- *Aphodius fuscolimbatus* Harold, 1880 new synonymy = *Mendidaphodius lepidulus* (Harold, 1866);
- *Aphodius* (*Nialus*) *sareptanus* Balthasar, 1935 new synonymy = *Mendidaphodius linearis* (Reiche & Saulcy, 1856);
- *Pseuderytus* Hollande & Thérond, 1999 is restored as valid genus for *Aphodius chobauti* (Clouët, 1896);
- *Pseuderytus chobauti* (Clouët, 1896) comb. nov. (ex *Aphodius* Sbg. *Calamosternus*);
- *Aphodius* (*Mendidius*) *oasis* Baraud, 1976 new synonymy = *Pseuderytus chobauti* (Clouët, 1896);
- *Chilothorax longetarsalis* (Pittino, 1988) comb. nov. (ex *Aphodius* Sbg. *Mendidaphodius* ?).

The lectotypes of the following taxa are designated:

- *Aphodius lepidulus* Harold, 1866 (in Berlin Museum);
- *Aphodius fuscolimbatus* Harold, 1880 (in Berlin Museum);
- *Aphodius* (*Nialus*) *malinovskiyi* Koshantschikov W., 1913 (in Saint Petersburg Museum);
- *Aphodius* (*Nialus*) *sareptanus* Balthasar, 1935 (in Prague Museum);
- *Aphodius* (*Nialus*) *sareptanus* var. *rubronotatus* Balthasar, 1935 (in Prague Museum).

RIASSUNTO

Si fornisce la revisione dei taxa appartenenti al genere *Mendidaphodius* gruppo *linearis* con l'aggiornamento della loro sistematica e del loro stato nomenclatoriale.

Per i taxa considerati sono stabiliti i seguenti nuovi status, nuove combinazioni e nuove sinonimie:

- *Mendidaphodius armiger* (Harold, 1871) stat. nov. & comb. nov. [ex *Aphodius* (*Liothorax*) *armiger* come sinonimo di *linearis*];
- *Mendidaphodius brancsiki* (Reitter, 1899) e *Mendidaphodius lepidulus* (Harold, 1866) comb. nov. (ex *Aphodius* Sbg. *Mendidaphodius*);
- *Mendidaphodius linearis* (Reiche & Saulcy, 1856) comb. nov. (ex *Aphodius* Sbg. *Liothorax*);
- *Mendidaphodius paganettii* (Petrovitz, 1963) stat. nov. & comb. nov. [ex sinonimo di *Aphodius* (*Liothorax*) *cylindricus* Reiche, 1856]
- *Aphodius* (*Mendidaphodius*) *spinifrontis* Reitter, 1907 nuova sinonimia = *Mendidaphodius brancsiki* (Reitter, 1899);
- *Aphodius* (*Mendidius*) *bagdadensis* Petrovitz, 1971 nuova sinonimia = *Mendidaphodius lepidulus* (Harold, 1866);
- *Aphodius fuscolimbatus* Harold, 1880 nuova sinonimia = *Mendidaphodius lepidulus* (Harold, 1866);
- *Aphodius* (*Nialus*) *sareptanus* Balthasar, 1935 nuova sinonimia = *Mendidaphodius linearis* (Reiche & Saulcy, 1856);
- *Pseuderytus* Hollande & Thérond, 1999 viene considerato genere valido per *Aphodius chobauti* (Clouët, 1896);
- *Pseuderytus chobauti* (Clouët, 1896) comb. nov. (ex *Aphodius* Sbg. *Calamosternus*);
- *Aphodius* (*Mendidius*) *oasis* Baraud, 1976 nuova sinonimia = *Pseuderytus chobauti* (Clouët, 1896);
- *Chilo thorax longetarsalis* (Pittino, 1988) comb. nov. (ex *Aphodius* Sbg. *Mendidaphodius* ?).

Vengono designati i lectotipi dei seguenti taxa:

- *Aphodius lepidulus* Harold, 1866 (Museo di Berlino);
- *Aphodius fuscolimbatus* Harold, 1880 (Museo di Berlino);
- *Aphodius* (*Nialus*) *malinovskiyi* Koshantschikov W., 1913 (Museo di San Pietroburgo);
- *Aphodius* (*Nialus*) *sareptanus* Balthasar, 1935 (Museo di Praga);
- *Aphodius* (*Nialus*) *sareptanus* var. *rubronotatus* Balthasar, 1935 (Museo di Praga).